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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,354	02/27/2002	Kazuhiko Mogi	ASA-1071	9208
24956	7590	09/14/2004	EXAMINER	
MATTINGLY, STANGER & MALUR, P.C. 1800 DIAGONAL ROAD SUITE 370 ALEXANDRIA, VA 22314			AMSBURY, WAYNE P	
			ART UNIT	PAPER NUMBER
			2171	

DATE MAILED: 09/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/083,354	MOGI ET AL.	
	Examiner	Art Unit	
	Wayne Amsbury	2171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/27/04</u> . | 6) <input type="checkbox"/> Other: _____ |

CLAIMS 1-21 ARE PENDING

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 the phrase: "positions of data of database" is unclear, and does not provide a proper antecedent for "said database" in claim 4. In the interest of compact prosecution, it is assumed that the intent was to claim: "positions of data of a database."

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Lowenthal et al (Lowenthal), US 6,035,306, 7 March 2000.

Lowenthal is directed to improving the performance of large databases [TITLE, BACKGROUND, COL 2 line 46 and after].

As noted in the Specification at page 6 concerning Lowenthal (Document 2), the intended improvement of the instant invention is consideration of "the feature (sic) of data" for improvements in data allocation. Lowenthal appears to address exactly that at COL 6 lines 27-46 and elsewhere.

As to **claim 1**, FIG 4 depicts a data storage apparatus including connection means to a network, a database, and a user terminal. The database of Lowenthal is a VLDB [COL 2 lines 46-58] that is managed by a database management system (DBMS) [COL 3 line 60 and after]. A typical DBMS of Lowenthal is noted to include tables, indexes, and logs, typically grouped in a tablespace and other objects [COL 4 lines 7-24]. The data may be distributed across a number of disks and logically managed as a plex [FIG 1-3; COL 4 lines 54-67]. The data structures that are used to monitor items are gathered into a schema database [COL 8 lines 25-44 and after]. The means for acquiring information in the schema data is the system of FIG 4. Lowenthal is directed to the placement of objects including tables, indexes, and logs as noted above, which corresponds to recording positions of such data grouped under these objects [COL 6 lines 27-46].

As to **claims 2-7**, Lowenthal notes that a plurality of databases typically operate on the same resources [COL 5 lines 1-11 and elsewhere]. This aspect of the system is addressed in detail throughout, as noted at COL 8 lines 13-17.

As to **claims 8-9**, Lowenthal manages and analyzes a VLDB at all levels, both logical and physical [SUMMARY; COL 2 lines 46-58].

Storing database data on a disc or other physical storage inherently requires the conversion from logical to physical storage. Lowenthal provides for changing storage placement [COL 6 lines 37-46]. Beginning at the top of COL 9 and through COL 14, Lowenthal is directed to the gathering and analysis of performance data for the purpose of optimizing placement of data. The plan for doing so includes recommendations concerning the placement of busy stripe sets, free space, and the like [COL 14 lines 17-45], followed by the actual move according to the plan developed. This corresponds to development of a plan and its implementation.

As to **claims 20-22**, Lowenthal teaches the interaction of the user with the monitoring and analysis system [FIG 4; COL 14 lines 5-39 and elsewhere].

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowenthal et al (Lowenthal), US 6,035,306, 7 March 2000 in light of Tsuchida et al (Tsuchida), US 5,317,727, 31 May 1994.

Lowenthal does not teach the use of a cache associated with database data. **Official Notice** is taken that it was well known at the time of the invention to use a cache as a subsystem in which frequently used data values are duplicated for quick access. Tsuchida provides evidence that this is the case, where prefetch operations are used to reduce input/output processing time [COL 3 lines 25-60]. **It would have been obvious** to one of ordinary skill in the art at the time of the invention to apply caching as in Tsuchida to the information managed by Lowenthal because that system is directed to Very Large Databases, and the amount of information to be processed is large.

The details set forth in claims 17-19 follow immediately from the use of a cache for input/output processing in Lowenthal.

4. Claims 10-16 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

As to **claim 10**, it is well known to migrate data to contiguous regions where it may be accessed in a sequential manner, but the prior art of record fails to teach this within the context of the other limitations of the claims.

As to **claim 11**, the prior art of record does not anticipate nor suggest basing allocation of data migrated within the context of the instant claims as based upon the degree of parallelism used for accesses.

As to **claims 12-16**, the prior art of record fails to teach the use of simultaneous access traffic to migrate storage within the context of the other limitations.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne Amsbury whose telephone number is 703-305-3828. The examiner can normally be reached on M-TH 7-5.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit: 2171

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WPA


WAYNE AMSBURY
PRIMARY PATENT EXAMINER